CLAIMS

What is claimed is:

1.   A method in a workspace management system comprising:

capturing an input video stream comprising images of a surrounding environment limited by a field of view of a digital camera using the digital camera;

processing the input video stream at a handheld computer coupled to the camera; and

redefining parameters that define a partial view of a virtual workspace based upon motion analysis of the input video stream performed by the handheld computer during the processing.

2.   The method of claim 1, further comprising displaying a redefined partial view of the virtual workspace on a display after the redefining, based upon the redefined partial view definition parameters.

3.   The method of claim 1, wherein the display is a component of the handheld computer.

4.   The method of claim 1, wherein the motion analysis is planar.

5.   The method of claim 1, wherein the motion analysis comprises tracking a location of a salient feature across the input video stream.

6.   The method of claim 5, wherein the tracking of the location of the salient feature further comprises:

measuring the location of the salient feature in a first frame;

measuring the location of the salient feature in a subsequent frame; and

comparing the location of the salient feature in the first frame against the location of the salient feature in the subsequent frame; and

computing a motion estimate based upon the comparing.

7. The method of claim 1, wherein the motion analysis comprises principal motion analysis of the input video stream, the principal motion analysis comprising:

computing optical flow of pixels of the input video stream; and

extracting a statistically dominant motion from the optical flow.

8. The method of claim 7, wherein the extracting further comprises:

caching results of the computing of the optical flow of pixels for multiple image frames of the input video stream; and

performing principal component analysis of the cached results to determine the statistically dominant motion.

9. An apparatus comprising:

a digital camera to capture an input video stream comprising images of a surrounding environment limited by a field of view of the digital camera; and

a handheld computer coupled to the digital camera, the handheld computer to receive the input video stream from the digital camera, to perform motion analysis of the input video stream and to redefine parameters that define a partial view of a virtual workspace based upon the motion analysis of the input video stream.

10. The apparatus of claim 9, further comprising a display that displays the partial view of the virtual workspace.

11. The apparatus of claim 10, wherein the display is a component of the handheld computer.

12. The apparatus of claim 9, wherein the motion analysis comprises tracking a location of a salient feature across the input video stream.

13. The apparatus of claim 9, wherein the motion analysis comprises principal motion analysis of the input video stream, the principal motion analysis comprising:

computing optical flow of pixels of the input video stream; and

extracting a statistically dominant motion from the optical flow.

14. A machine-readable medium having stored thereon a plurality of instructions, which if executed by a machine, cause the machine to perform a method comprising:

capturing an input video stream comprising images of a surrounding environment limited by a field of view of a digital camera using the digital camera;

processing the input video stream at a handheld computer coupled to the camera; and

redefining parameters that define a partial view of a virtual workspace based upon motion analysis of the input video stream performed by the handheld computer during the processing.

15. The machine-readable medium of claim 14, wherein the method further comprises displaying a redefined partial view of the virtual workspace on a display after the redefining, based upon the redefined partial view definition parameters.

16. The machine-readable medium of claim 14, wherein the motion analysis comprises tracking a location of a salient feature across the input video stream.

17.   The machine-readable medium of claim 15, wherein the motion analysis comprises principal motion analysis of the input video stream, the principal motion analysis comprising:

computing optical flow of pixels of the input video stream; and

extracting a statistically dominant motion from the optical flow.

18.   A system comprising:

a processing unit in a handheld computer;

a memory coupled to the processing unit through a bus; and

a partial workspace view rendering process executed from the memory by the processing unit to capture an input video stream comprising images of a surrounding environment limited by a field of view of the digital camera using the digital camera, and redefine parameters that define a partial view of a virtual workspace based upon motion analysis of the input video stream performed by the handheld computer.

19.   The system of claim 18, wherein the motion analysis comprises tracking a location of a salient feature across the input video stream.

20.   The system of claim 18, wherein the motion analysis comprises principal motion analysis of the input video stream, the principal motion analysis comprising:

computing optical flow of pixels of the input video stream; and

extracting a statistically dominant motion from the optical flow.

21.   A system comprising:

a partial workspace view rendering device comprising a digital camera to capture an input video stream comprising images of a surrounding environment limited by a field of view of the digital camera and a handheld computer coupled to the digital camera;

a server communicatively coupled to the partial workspace rendering device; and

a client computer communicatively coupled to the server, wherein operations of processing the input video stream, performing motion analysis of the input video stream and a redefining parameters that define a partial view of a virtual workspace based upon the motion analysis of the input video stream are distributed between the partial workspace view rendering device, the server, and the client computer.

22.   The system of claim 21, wherein a redefined partial view of the virtual workspace is presented on a display coupled to the client computer, based upon the redefined partial view definition parameters.

23.   The system of claim 21, wherein the motion analysis comprises tracking a location of a salient feature across the input video stream.

24.   The system of claim 21, wherein the motion analysis comprises principal motion analysis of the input video stream, the principal motion pixel flow analysis comprising:

computing optical flow of pixels of the input video stream; and

extracting a statistically dominant motion from the optical flow.